

## **Claims**

What is claimed is:

5  
1. A system for determining a quality of service,  
comprising:

10 a plurality of passive probes attached to a plurality of network  
connections in a packet communication network; and

15 a collector correlator in communication with the plurality of  
probes, the collector correlator determining a dropped packets  
measurement.

20 2. The system of claim 1, wherein the collector correlator  
measures a delay time.

25 3. The system of claim 1, wherein the collector correlator  
measures a jitter.

4. The system of claim 1, wherein each of the plurality of  
passive probes has a sampler.

5. The system of claim 1, wherein each of the plurality of  
passive probes has a time stamp subsystem.

6. The system of claim 1, wherein each of the plurality of passive probes has a probe packetizer.

7. The system of claim 1, wherein the collector correlator transmits a control information packet.

8. The system of claim 1, wherein one of the plurality of probes transmits a report packet.

9. The system of claim 1, wherein the collector correlator is capable of calculating a quality of service without monitoring every network connection.

10. A method of determining a quality of service, comprises the steps of:

- a) defining a flow to monitor at a collector correlator;
- b) transmitting a control information to a probe;
- c) selecting a traffic packet at the probe based on the control information packet; and
- d) transmitting a report from the probe to the collector correlator.

11. The method of claim 10, wherein step (a) further includes the step of:

a1) randomly selecting the flow to monitor.

5

12. The method of claim 10, wherein step (a) further includes the step of:

a1) receiving a user input defining the flow to monitor.

10

13. The method of claim 10, wherein step (a) further includes the step of:

a1) defining a pair of packet addresses.

15

14. The method of claim 10, wherein step (a) further includes the step of:

a1) selecting a port number.

20

15. The method of claim 10, wherein step (a) further includes the step of:

a1) selecting a type of protocol.

25

16. The method of claim 10, wherein step (a) further includes the step of:

5 a1) selecting which of the plurality of probes are to monitor the flow.

17. The method of claim 10, wherein step (d) further includes the step of:

10 d1) determining a time the traffic packet was detected.

18. The method of claim 10, wherein step (b) further includes the step of:

15 b1) transmitting a report queue control information.

19. The method of claim 18, wherein step (b1) further includes the step of:

20 i) defining a time of day.

20. The method of claim 18, wherein step (b1) further includes the step of:

25 ii) defining a queue length.

21. The method of claim 18, wherein step (b1) further includes the step of:

iii) defining a discard rule.

5

22. The method of claim 10, wherein step (d) further includes the step of;

d1) calculating a quality of service with incomplete data.

10

23. A system for determining a quality of service, comprising:

15

at least two passive probes attached to at least two network connections in a communication network; and

a collector correlator in communication with the at least two passive probes, the collector correlator determining a flow to be monitored.

20

24. The system of claim 23, wherein the collector correlator transmits a control information to the at least two passive probes.

25. The system of claim 23, wherein the at least two passive probes transmit a report to the collector correlator.

25

26. The system of claim 23, wherein the collector correlator measures a jitter.

5 27. The system of claim 23, wherein the at least two passive probes have a common clock.

28. The system of claim 24, wherein the control information includes a report queue control information.

10 29. The system of claim 23, wherein the collector correlator is capable of computing a router's quality of service without monitoring any of the network connections connected to the router.